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The constraining effect of incomplete contracts on the public reporting of waste management data

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ABSTRACT

This article assesses the extent to which incomplete contracts and agreements in waste management limit accountability to stakeholders. The theory of incomplete contracts holds that contracts are under-specified in areas where transaction costs in controlling contingencies exceed the perceived benefits to be derived from such control. A textual analysis of the narrative embodied in public policy documents, the corporate plans of an Australian regional waste management authority and its member councils, and transcripts from interviews with key actors, indicate complex contractual relations resulting from commonwealth and state waste policies. The study finds transaction costs are the immediate cause of incomplete contracts in the provision of waste data. The resulting agency problem could be alleviated by designing a more complete social contract, through legislation and regulations specifying minimum data requirements in contracts to outsource waste management. Improved regulation would facilitate more effective policing of illegal stockpiling of wastes and reveal the impact of the recently increased waste disposal to landfill on proximate amenities such as property values.

KEYWORDS

Environmental management accounting; local government; incomplete contracts; social contract; waste management

Q2 Introduction

Concerns about the environmental benefits of re-cycling waste compared to the cost of landfill began to be widely reported in the early 1990s. An increase in recycling has subsequently resulted in oversaturated markets and volatile prices for recycled goods, and improper disposal of collected recyclables (Loughlin and Barlaz 2006). Some countries, such as Germany, have better records in managing these processes than others, e.g. Australia (Blue Environment 2014). The disclosure of waste management data has an important role to play in improving the outcomes of environmental waste management by providing stakeholders with information to pressure their political representatives for change (Lloyd-Smith 2009).

In this article we assess how, and the reasons why, incomplete agreements and contracts (Hart and Moore 1999) in regional Australian environmental management networks constrain the collection and reporting of waste data to higher levels of

government. Official data on national waste generation and resource recovery in Australia are reported on a three-yearly basis. The most recent data were reported in 2013 (DEE 2014). The quality of national waste data depends on the collection and consolidation of accurate, complete and valid waste data obtained from the states and territories. Consultants responsible for the consolidation of regional waste data reported that in many cases gaps in the data reported were filled by their professional judgement (Blue Environment 2014).

A comparison of waste recovery rates across Australia shows that Tasmania 'under-performs' in the recovery and diversion of waste from landfill (Blue Environment 2014; Redmond et al. 2014). As elsewhere in Australia, waste service providers such as recyclers are often not required to report waste data under relevant state legislation. Third parties mostly do not verify data, and voluntary disclosures through questionnaires and surveys show low response rates (Net Balance 2009).

A substantial portion of the regional data reported by the Department of the Environment and Energy (2014) is specific to waste collected and disposed by local government authorities (LGAs). LGAs often contract waste services to external providers (Bel, Fageda, and Mur 2014). The consequential delegation of data collection responsibilities has diminished the value of waste data for national reporting purposes, amplifying existing environmental data collection and reporting vulnerabilities (e.g. Oates and Moradi-Motlagh 2016; Tavares 2017). Data collection and reporting of waste data in Australia is held to be insufficient and inaccurate (EPHC 2010b).

In Australia, processes established by political institutions to meet social expectations are frequently implemented through the mechanisms of private or quasi-private markets. In waste management, it is common for local councils to contract with third parties, often private corporations, to collect kerbside waste, separate recyclables and dangerous items, and distribute these to appropriate locations, such as landfill sites, recycling plants and sites devoted to the containment of toxic waste. The costs of these transactions are usually determined by the negotiation of individual contracts between the local authority and the waste disposal provider. On the other side of the transaction, the local authority includes these costs in the calculation of rates, being a form of transaction cost, levied on its constituents. Likewise, state and federal governments may provide subsidies and introduce waste disposal levies to implement nationally determined waste management policies.

The adequacy of agreements between state and local government, and private contracts between local government and waste service providers, regarding the provision of waste data, is therefore important. In this article, we apply the theory of incomplete contracts, to investigate the provision of waste management data, following a textual analysis of policy statements and transcripts of interviews concerning the value of those documents. The method isolates thematic elements from large volumes of text and sets them in a narrative context (Bruner 1998). This method of text analysis preserves the narrative element by identifying and reporting the broad contextual factors in which the origins of paucity of management data and lack of accountability lie. The findings of this research will assist waste managers and policy makers to develop stronger accountability contracts with respect to the provision of waste data, resulting in more effective monitoring mechanisms and informative reporting strategies (Curran and Hollander 2002).

Review of prior relevant research

The accountability duties of public managers and accountants with regard to environmental reporting are primarily to comply with statutory provisions in an increasingly complex regulatory environment (Aulich, Sansom, and McKinlay 2013). Disclosure of performance, such as reduction of waste disposal to landfill, is also increasingly demanded by stakeholders (Bebbington and Gray 1993; Ball 2012). The collection and reporting of waste data place considerable demands on the professional skills and resources of LGA managers (Ball, Broadbent, and Moore 2002). Studies show that Australian LGAs have limited resources to collate and distribute environmental information to internal and external stakeholders (Oates and Moradi-Motlagh 2016). Australian LGA managers often view accountability in minimalistic terms of satisfying state government regulations, not for ethical and environmental reasons or to provide better monitoring of waste management at a national level (Lodhia, Jacobs, and Park 2012).

External contracting of waste management services by LGAs introduces another layer of accountability. While external contracting results in the flow of waste data across organisational boundaries, under-specified contracts could potentially undermine reporting requirements (Ball, Broadbent, and Jarvis 2006). Accountability challenges for Australian LGA managers, as elsewhere, arise from problems inherent in contracting processes, i.e. a principal versus multiple self-interested agent relationships with ill-defined performance measures (Jensen and Meckling 1976; Mulgan 2006). For example, waste service providers, including LGAs, who operate waste collection, landfill or resource recovery services, often do not want commercially confidential data made available to their competitors (Net Balance 2009).

To minimise opportunistic behaviour of agents, governments incur transaction costs to specify more detailed data reporting requirements and monitoring measures (Brown, Potoski, and Van Slyke 2007). Due to accentuated cost considerations, under-specified clauses regarding waste data in contracts negatively influence an LGA's ability to collect and report public waste data to higher levels of government. According to the theory of incomplete contracts (Hart and Moore 1999), for these agreements to be adequately specified, additional transaction costs in terms of writing, negotiation, measuring and monitoring are incurred. Avoidance of the additional transaction costs results in ineffective, under-specified agreements (Bel and Fageda 2007).

As government policy interventions, the Australian National Waste Policy Implementation Plan ('implementation plan') and Tasmanian Waste Strategy (the 'Tasmanian strategy') suggest the adoption of complex contracting principles to establish best-practise waste management networks and to improve collection and reporting of waste data to higher levels of government (EPA 2009; EPHC 2010a). Complex contracting in the public sector can be broadly conceptualised as anything from normal commercial, arms-length contracts to collaboration with closely connected partners (Bel and Fageda 2008; Bel, Fageda, and Mur 2014). Public managers are prone to keep difficult-to-measure and highly asset-specific services in-house (Williamson 1999; Brown, Potoski, and Van Slyke 2010). Numerous studies have reported local government managers entering into voluntary collaborations to reduce costs and improve efficiencies (Bel and Gradus 2017) in line with the theories of Williamson (1981, 1999). In Australia, these collaborations are often formally governed through contract driven, purpose specific, joint LGAs (Denhardt and Denhardt 2000; Kloot and Martin 2007).

The expansion in the scale and scope of complex contracting in the Australian public sector in the past two decades raises the question of whether the implicit social contract between constituencies and their government and its agencies, for the provision of positive community outcomes has been maintained (Aulich 2011). Guaranteeing improved public waste services delivery outcomes, e.g. reduction of disposal to landfill, in a complex contracting environment requires new governmental roles (Bae 2010). A lack of federal and state government guidance, such as legislative frameworks and standards for complex contracts, results in an uncertain policy environment (Burritt 2012).

In this context, instances of mixed messaging and conflicting interventions between federal and state governments are likely to arise (Keast, Mandell, and Brown 2006). The introduction of service-level agreements, as a communication device to clearly define obligations, has been argued as a means to improve the accountability relationship between local and state governments (Moll and Hoque 2008; Reid 2012). The uncertain policy environment can further be remedied with regulation aimed at improving information flows between a myriad of actors. In Australia, ecologically sustainable development regulatory review processes are historically supported by the publication of a regulatory impact statement. In assessing the net economic, societal and environmental benefits, effective public discourse necessitates suitable monitoring mechanisms and informative reporting strategies (Curran and Hollander 2002).

Social contract theory has been proposed as a way of framing the discussion of environmental issues. In the context of environmental accountability, this is based on the idea that public sector organisations have a social contract with society to perform certain tasks that will benefit the environment (Burritt and Welch 1997). Some have noted in a legitimacy context that any social contract for protection of the environment is under-prescribed. It may arise from the fact that different managers at different levels of an environmental protection process often have different perceptions about the various 'terms' of a contract (Deegan 2002).

A lack of environmental management skills and resources in Australian local government (Pini 2009) is also likely to contribute to the writing of under-specified contracts and service agreements (Brown, Potoski, and Van Slyke 2007; Bel, Fageda, and Warner 2010; Minkoff 2013). This is another possible cause of poor quality public reporting of waste data (Blue Environment 2014).

The implications of under-reporting of waste data, arising from the various causes identified in prior research, for establishing effective environmental waste management policies and practices are not yet well explored (Bel, Fageda, and Warner 2010; Burritt 2012). This article contributes to an improved understanding of this issue through the analysis of documents and interviews with those involved in waste management processes, using the theory of incomplete contracts.

Theory and method

Theory

The economic theory of incomplete contracts holds that the parties to a contract cannot fully predict all future possible scenarios (Hart and Moore 1999). In service delivery contexts, such as those involving outsourcing, contracts are incomplete, not only because the

parties did not foresee the contingency, but also because it is too expensive to describe all contingencies (Brown, Potoski, and Van Slyke 2006; Bel and Fageda 2007; Rodrigues, Tavares, and Araújo 2012). Hart and Moore (1999) see the incomplete contract literature as a development of transaction cost economics (Williamson 1981). Difficult-to-measure services and contingencies around ownership and management of specialised assets increase transaction costs and therefore the likelihood of underspecified contracts in waste management (Williamson 1999; Brown, Potoski, and Van Slyke 2010).

In the under-reporting of waste data, incomplete contracts represent a trade-off between the hard-to-measure social value of improved environmental waste management outcomes and the less hard-to-measure estimated transaction costs of their procurement. The visibility of the latter make it likely that, in the absence of a requirement upon the parties to a contract to explicitly consider the value of public good outcomes, the costs of providing waste data and its audit limit contractual waste data reporting. Less complete contracts allow the contracting parties to explore opportunities for innovative, new waste management techniques, but the lack of specification leaves room for opportunism by either the vendor or the contracting government (Brown, Potoski, and Van Slyke 2007).

The unresolved information asymmetry in waste management contracts resulting from the omission of reporting and auditing requirements leads to agency problems of hold-up, adverse selection and moral hazard. For example, a lack of resources dedicated to best-practice environmental waste management leads to market failure through a lack of parties willing to negotiate the provision of modern waste management services. Then, when such services are forthcoming, for-profit service providers or managers may act in their own interests and not disclose sufficient information to establish adequate accountability (Jensen and Meckling 1976; Net Balance 2009; Brown, Potoski, and Van Slyke 2010). Thus, although external contracting may result in operational cost savings, it may also lead to deterioration in the quality of the service (Bel and Fageda 2008).

Rationally, the decision of how much data to report in waste management contracts is determined by a comparison of the benefits and costs of waste management to the contracting parties. Environmental stakeholders want to maximise benefits and waste management providers want to minimise costs. In practice, the complex nature of the contingencies involved and considerations of inter-generational equity produce the possibility of, at best, a multi-equilibria solution to the problem. We seek to understand the existence of the many different contracting outcomes with respect to the provision of waste data in our case study through a transaction cost analysis using the theory of incomplete contracts.

The setting for this research is the Southern Waste Strategy Authority (SWSA), a duly constituted LGA, including its 12 member councils and service providers, in Southern-Tasmania, Australia. Waste management services are contracted in the SWSA jurisdiction to a range of private, public and quasi-public service providers (Hyder Consulting 2011), attempting to satisfy government policy directives for the establishment of multi-agency arrangements and active partnerships. The question therefore arises: do the complex contracts, arising from the myriad of relationships as suggested and directed by the implementation plan and the Tasmanian strategy, adequately specify the demand for waste data? If, as prior research suggests, data to support the effective management of waste is deficient, the question is: what are the underlying causes of the deficiency and how might they be remedied? In the context of our case study, we answer this question by a textual analysis of policy documents and interview transcripts.

Method

A narrative approach to textual analysis is adopted. This is used to place the themes that content analysis identifies as being present in the texts in a dynamic setting, so that the underlying causes of problems that evolve over time can be better understood (Weinberg 1994). Adding a narrative to a content analysis offers a way of testing a theory (McAdams 2012) as well as identifying emerging themes that may not be obvious from previous research, thus allowing inductive development of new theories. The first stage of the method used in this study, therefore, is a narrative analysis of the federal government's stated objectives over a period considered relevant to the issue being studied and the record of attempts to implement it at the local level.

The second stage of the method is a content analysis of policy documents such as the federal government's implementation plan (EPHC 2010a). This was undertaken using NVivo software to identify expected and unexpected themes in the source documents. The text in 38 corporate plans and strategy statements of the LGAs in the SWSA jurisdiction was also analysed for thematic references to waste service contracting. These documents covered periods varying from one to five years during the period 2008–2015.¹

The third method component is a series of interviews with agents who are key players in the southern Tasmanian waste industry. An interview protocol was constructed based on the second stage document analysis. Twelve semi-structured, open-ended interviews lasting between 40 and 60 minutes were conducted with senior and middle managers of the Tasmanian state government, LGAs and their service providers and community representatives. Descriptors (Table 1) are used sparingly to protect anonymity. The interviews were transcribed and analysed with NVivo software. The interview protocol was approved by the University of Tasmania ethics committee.

Findings

Contextual narrative

In 2011, Australia was the world's seventh highest producer of waste per capita, disposing of approximately 50 per cent in landfill as compared to 10 per cent in Western-European countries (DEE 2014). In Tasmania, at least 70 per cent of waste is disposed in landfill, with LGAs attending directly, or through complex contracting to the collection and

Q3 Table 1 . xxx.

Interviewee	Position in organisation	Organisational type
1	General manager	LGA A
2	Councillor	LGA B
3	Community leader	LGA G
4	Community leader	LGA C
5	Senior manager	LGA D
6	Senior manager	Service provider A
7	General manager	Service provider B
8	Senior manager	Tasmanian Government
9	Senior manager	LGA E
10	General manager	Service provider C
11	Senior manager	LGA E
12	Senior manager	LGA F

disposal of the great majority of municipal solid waste (Blue Environment 2014). The Australian Federal Government's obligations, resulting from internationally binding agreements such as the Basel Convention, led to the Council of Australian Governments (COAG) adopting the National Strategy for Ecologically Sustainable Development in 1992 and a National Waste Policy and Implementation Plan in 2010 (EPHC 2010a). COAG agreed that states would be responsible for the collection and reporting of regional waste data to the federal government.

The implementation plan advocates improved waste management systems, including data collection systems by suggesting the adoption of complex contracting of waste management services such as 'multi-agency management arrangements' and 'active partnerships' between governments and industry (EPHC 2010a). In response, the Tasmanian government, through the Tasmanian Waste Strategy, assigned some of its responsibilities to account for national waste data to LGAs and their service providers. The Tasmanian strategy recommends that agencies support national data collection and reporting by engaging in similar complex contracting initiatives such as 'collaborative partnerships' (EPA 2009). No reference to formal contracting principles is made by either the federal or state governments.

Incomplete contracts

The corporate planning documents of LGAs show that contracts for waste management services with external service providers are common. Five of the 12 councils in the study included some aspect of contractual planning for waste management in their corporate planning documents (Derwent Valley Council 2011, 12; Kingborough Council 2011, 9; Clarence City Council 2013, 72; Glamorgan Spring Bay Council 2013, 34, 53, 74; Tasman Council 2013, 35, 36). References made to waste contracts are mostly in generic terms. For example, the Clarence City Council (2013) refers to the establishment of new seven-year contracts for wheelie bin based collection of green waste, residual waste and recyclables. No specific details of these contracts are provided (see also Derwent Valley Council 2011, 12).

A consultant to the SWSA (Blue Environment 2011) reflected on the poor quality of waste data by suggesting that contracts in the SWSA jurisdiction do not adequately specify the demand for waste data:

There are gaps in recorded data in southern Tasmania, both on the amount and source of generation of waste and on the amount and type of materials recovered. Council contracts should address regular provision of this information by contractors. (89)

Most councils engage in resource-sharing and regional co-operation, which leads to collaborative contracts. For example, in the Derwent Valley Council long-term waste disposal and waste transfer systems underlie the preferred mode of contracting for the municipality in conjunction with other southern councils (Derwent Valley Council 2011, 8).

It is evident from text searches of relevant documents around the word 'contract', that long-term contracts (e.g. 20-year waste disposal agreements) are common. For example, the Copping regional authority, a landfill site which accommodates controlled wastes, has longer-term contracts with their customers, which include several LGAs (Blue Environment 2011, 18). Although formal contract management principles are observed

(Glamorgan Spring Bay Council 2013, 34, 38, 53), only limited opportunities to renegotiate under-specification in long-term contracts are available. For instance, base rates in some commercially attractive waste disposal contracts are only reviewed every 10 years (Blue Environment 2011, 72).

As part of the interview process, participants were asked to consider how the demand for waste data are constrained by contract specification. The LGA and waste service provider managers (Interviewee 5, 6, 7, 8, 10 and 11) agreed that a strong written contract, with clear specifications regarding the demand for waste data, is essential for proper monitoring and management of those demands. For example;

So it is the duty of the local government when they give out contracts to make sure that they got [sic] to report ... You've got to give the monthly tonnage by the first ten days of the month – very crystal clear (Interviewee 6)

And that's where the councils have to be careful with the way they word their contracts, so they've got to get the data and also potentially and preferably have the right to go and audit the data so that they know that it's correct. ... You've got to be able to get the data and be satisfied as to its quality. (Interviewee 7)

Managers observed that they are constrained to renegotiate increased specification by the term of the contract. For example;

If I look at our waste contracts, –it'll be another two or three years before the opportunity exists to change that again ... There's no clause in there about waste data whatsoever. There's other stuff about the type of machinery and things like that but nothing about the actual waste data. (Interviewee 12)

Quantification of waste streams requires specific measurement techniques such as weighing Q4 bridges and classification standards (Morrison and Munro 1999). If a contract does not allow for regular renegotiation, it is not possible for councils or regional bodies to specify amendments to facilitate new and improved data collection techniques and standards, prescribed by higher levels of government (Ball, Broadbent, and Jarvis 2006; Net Balance 2009; Curtis et al. 2014).

Agency issues

Strategic managerial issues relating to risk and monitoring contract specifications (Brown, Potoski, and Van Slyke 2007) between LGAs and waste service providers are apparent in corporate documents. For example, Kingborough Council ranks poor and inconsistent management of contracts as a top strategic risk, whilst Glamorgan Spring Bay Council promotes formal contract management policies as an appropriate risk response:

The top organisational or strategic risks are ... failure of council to deliver expected infrastructure and services through poor and inconsistent management of large contracts. (Kingborough Council 2011, 9)

Compile a contract register to ensure a more streamlined approach to contract management across the organisation ... Manage relevant leases and contracts. (Glamorgan Spring Bay Council 2013, 34, 74)

Contract specification and trust in reputable suppliers (Brown, Potoski, and Van Slyke 2007) are important in determining the quality of waste data. Interviewee 5, a senior

manager of a LGA, observed that quality waste data may be lacking even if the contract is apparently otherwise adequately specified, since the choice of reputable waste service providers is also important:

... sometimes it's hard, as [a] contract may be perfectly fine but you might end up with a very bad contractor. But then you get a very good contractor who has all the good systems ... and they have their reputation, and so they have good systems ... we never had any issues getting data.

In contrasting the views of waste service providers with those of LGA managers, Interviewee 10, the general manager of a national waste service provider, remarked that contract specification is only part of the equation in providing quality waste data. Practicalities, such as sorting waste into appropriate categories impacts on the quality of waste data:

It all depends on the ability of the transfer station to segregate waste. If the waste segregation is done properly then our systems can pick it up okay ... and [then] there's probably no need for a weighbridge per se there. But it all goes back to the written document as well.

Reid (2012) suggests that service-level agreements between different levels of government improve communication and accountability. However, there was little evidence in the corporate plans that such agreements are contemplated by LGAs to improve the flow of environmental data. Only one reference to such an agreement was observed in the analysis of the LGA corporate plans:

... commitment to the State Wide Partnership Agreement on Communication and Consultation with the State Government (Kingborough Council 2013).

The Tasmanian state government suggests that the state-wide partnership agreement assists in the consultation process with local government on relevant legislative proposals and ensures that there is liaison on matters raised by the commonwealth government (DPC 2016). As the implementation plan is a commonwealth matter, which requires consultation between state and local governments, the expectation is that this agreement will improve the collection of regional waste data. However, if categories of waste were not adequately prescribed by higher levels of government, and thereafter in contract specification between lower levels of government and waste service providers, information asymmetry between multiple principles and agents would likely to continue.

Transaction costs

Several LGA managers (Interviewee' 1, 5, 9 and 12) were concerned with contract management and monitoring issues that impact indirectly on the demand for waste data. Strategic managerial issues related to the increased cost of demanding and monitoring contract specifications were noted by these respondents.

Some managers of waste service providers (Interviewee 6, 7 and 10) noted that cost considerations, when specifying the demand for waste data, play a key role for commercial service providers. For instance:

We would've taken into account when we were tendering for that process – the requirements of data collection. So there's a cost, but we could adequately provide what they want ... and they probably need to be a little bit more specific in their contracts with what the requirement is for data provision ... (Interviewee 10)

As observed in a study on environmental accounting systems in Australian local government (Qian, Burritt, and Monroe 2011), small and rural LGAs are constrained by a lack of internal resources, with small contractors not always being able to supply adequate waste data. The councillor of a small rural council confirmed the limited availability of recycling contractors. Transaction costs constrain the council in demanding adequate waste data:

We are a small council. [Contractor name withheld] works two days a week ... part of his responsibility is to record that information ... what it costs – Each year *it's* just becoming more and more expensive ... we know exactly how much goes to landfill. As far as recycling, we *don't* know how much is recycled, because our contractor *can't* even give away what he gets out of the kerbside collection ... And if we required that level of data collection from our small country contractor - basically he *couldn't* afford it. (Interviewee 2)

This is short of a hold-up or adverse selection problem but, in contrasting the service costs of recycling and disposal of waste, the evidence is that increased transaction costs result in the writing of under-specified contracts with respect to the demand for recycled waste data. It also shows that additional transaction costs, in monitoring recycling services, play a role in determining the quality of waste data. Even where the contract adequately specifies the demand for waste data, service providers may not be willing to disclose data due to unscrupulous practices (Brown, Potoski, and Van Slyke 2007). A general manager of a waste service provider (Interviewee 7) explained that recyclables can easily be claimed as being contaminated. This enables the recycler to dispose the so-claimed contaminated waste stream, destined for resource recovery centres, in landfill (Loughlin and Barlaz 2006).

Social benefits and private costs

Public managers of LGAs are expected to improve *the* affordability of waste disposal services to customers in the short term, but paradoxically, deliver strategic, *long-term* responses to a broader range of stakeholders, to address the unabated increases in waste disposal to landfill (Ball, Broadbent, and Moore 2002). Interviewee 11, the senior manager of a LGA, considered that the oversight role councillors play in ensuring clauses in the 'social contract' of government agencies with communities, could be made implicit in commercial agreements with waste service providers:

... to me it is all in how you write your contracts, and how well your contracts are reviewed by councillors, or if *you're* using a consultant to write your contract, how good their knowledge is and how much they know [what] your requirements are for reporting ... in this type, in this format ...

Depending on how councillors view their social obligations, affordable waste disposal services may take preference over environmentally focussed initiatives aligned with the national waste policy. Corporate planning documents refer to the importance of affordable waste disposal as the cornerstone of regional waste policy. For example, Southern Waste Solutions is a regional landfill facility and is managed collaboratively by four LGAs in the SWSA jurisdiction. By entering into commercial-in-confidence, *long-term* contracts, and committing themselves to disposal of waste to the landfill, economies of scale are likely to result in lower waste disposal costs for the collaborating parties than would otherwise be the case:

The Owner Councils are to lease to the Authority the Land on the following terms ... for an initial term of fifty (50) years ... (SWS 2012a, 8, 29)

Negotiate commercially attractive long-term contracts to complement the life of the Copping site, and seek the site operator's support to share any emerging economies of scale. (SWS 2012b, 4)

The Copping site, as explained above, is a controversial issue in Southern Tasmania. Environmentally conscious groups (Interviewee 3 and 4) argue its location, in a relatively pristine environment near to the source of a river, which serves a range of amenities and sensitive wildlife habitats, is a stark illustration of financial cost considerations out-ranking environmental concerns (Hunt 2012). Local community leaders argue that the contracts designed by government agencies with contractors do not meet the environmental expectations of communities:

For council to 'make money' from the endpoint of waste disposal necessarily implies a landfill outcome as it is the only endpoint outcome for waste that [so] they can afford the capital infrastructure and potentially make a margin from [sic] ... In effect they are monopolising the market leading to the very poor overall outcomes for waste recovery in Tasmania. (Interviewee 3)

I can't see anything really that if it impacts on community through local government that ~~shouldn't~~ be open ... they ~~shouldn't~~ have a profit motive, because I think then ... you get sort of shady business deals. (Interviewee 4)

Demand for transparent, quality environmental data to meet social expectations acknowledges the existence of social transaction costs beyond financial outflows (Harriden and Graymore 2013). Attempts to quantify the full cost of waste disposal to landfill through levies, considering the social contract dimension of the process, are highly contested in Tasmania (Hyder Consulting 2011; Bel, Fageda, and Warner 2014). In estimating the benefits of collecting recyclables with low market value, estimates of collection rates ignore the fact that considerable quantities of waste in Australia are being stockpiled awaiting the identification of suitable markets, the existence of which now, or in the future, is uncertain. Regulated information flows are therefore necessary to police the illegal stockpiling of waste in Australia. This would address known corruption risks linked to the illegal storage, dumping, transboundary shipment and trafficking of hazardous waste (White and Heckenberg 2011).

Discussion

In this case study, the hierarchy of agents and institutions, from the federal government to local contractors, involved in the processes of waste disposal, provides a complex environment within which to analyse issues relating to the provision of environmental waste management data via the theory of incomplete contracts (Hart and Moore 1999). At the top of this hierarchy, federal legislation is affected by the wider social and environmental agenda of international agencies (Burritt and Welch 1997). At lower levels, state and local government interpret federal legislation in their regulations. When waste management processes are mandated at community level new institutions such as the Southern Waste Strategy Authority are created. Transaction cost economics play a key role in such collaborative initiatives to satisfy implied social objectives, such as the safe and hygienic disposal of waste and recycling (Curtis et al. 2014).

Based on this case study evidence, LGA managers and their service providers consider strong, written contracts at the local level to be essential for producing high-quality waste management data necessary to support meeting environmental waste management goals (Brown, Potoski, and Van Slyke 2006; 2010). Cost considerations in local service delivery and agents' behaviours with respect to these suggest that transaction cost principles play an important role in explaining the extent of incomplete contracts at the operational level (Williamson 1981). It is also evident that the demand for waste management data by higher levels of government is constrained by the cost of renegotiating contract amendments to facilitate new and improved data collection techniques. Consequently, in addition to transaction cost and agency-type behaviours at the local operational level, the public good aspects of waste management processes suggest viewing legislation and regulations in this case as a form of an incomplete social contract that exists between the different levels of government and their constituents

As the evidence in this, and other studies show, processes involving the treatment of waste in modern economies that meet objectives involving the long-term protection of the environment do not usually come into existence through the workings of the free market or the conscientious application of ethical principles by individuals charged with waste management at the local level (Bebbington and Gray 1993; Ball, Broadbent, and Jarvis 2006).

In the context studied here, different agents and institutions at different levels in the reporting hierarchy have different objectives and motives. Private waste disposal contractors seek profit whereas local authorities seek satisfactory outcomes at the lowest cost to their ratepayers. Local governments represent a narrower constituency than the state government and the federal government is more focused on meeting its international obligations than are the state governments, which have more domestic concerns. As the reporting hierarchy for waste data is essentially top-down, the lack of precision in data requirements and monitoring in federal legislation and regulations is reflected in contracting at the local level. For example, in a recent national assessment of the net public economic, social and environmental benefits to be derived from diverting the disposal of television and electrical equipment from landfill, senior public managers lamented the lack of publicly available data to support their contingent valuation techniques (Blue Environment 2014). Improved regulation of data flows would result in information becoming available to estimate values associated with public tolerance of degraded environmental conditions (Bennett et al. 2008).

Incompleteness in the social contract under this interpretation is a significant contributing cause of incompleteness in contracts at the foot of the reporting hierarchy, at the local level between LGAs and their outsourced agents. The assessment of net public benefits from improved regulated, information flows at federal level extends to private benefits for individuals at local level. Property owners are keenly interested in information on the degree to which their assets are or will be devalued by increases in waste disposed to landfill, or stockpiled, in nearby vicinities. In Pennsylvania, US, the state department of environmental protection is required to consider information of disposal of types and volumes of waste on property values when making landfill permitting decisions (Ready 2010). Improved information demanded by regulation result in improved compliance and lower regulatory costs by avoiding communities becoming disenchanted and negating the risk of costly combative legislative action.

Conclusion

From the case study reported several major issues are identified.

First, there is clear evidence of incomplete commercial contracts at the grass-roots level. Contracts between LGAs and service providers do not adequately specify waste data reporting obligations with a lack of opportunity for renegotiation. Second, the lack of data provisions in incomplete contracts lead to a myriad of agency problems that extend throughout waste management processes from the local to the national level. Service-level agreements between the state and local government do not facilitate the collection and reporting of waste data and the connection between federal and state policies is unclear. Third, the additional transaction costs created by the introduction of processes mandated by national waste management policies relative to their perceived benefit constrain the data that are collected and reported at all levels of the waste management process. Fourth, a lack of clarity in the statement and transmission of the objectives of the national waste management policy and a lack of guidance as to how it should be implemented is an important factor contributing to the problems associated with incomplete contracts in this instance.

Elements of incompleteness in the social contract implicit in federal government policy documents relating to waste management data are reflected at local level in contracts between LGAs and their service providers. The result is a lack of data for managing waste effectively, acquitting accountability relationships from the local level upwards and of environmental reporting at a national level being less accurate and informative than it could be.

Consequently, there is an argument supporting managerial style, quasi-contracts, possibly in the form of new regulations, which define obligations, rights and rewards, specifically with respect to the provision of data, in the waste management process. We find support for this position in Curran and Hollander's (2002) empirical findings that ecological sustainable development, regulatory review processes demand effective monitoring systems and informative reporting strategies. We concur with White and Heckenberg (2011) in calling for effective regulation of waste information systems as part of the public manager's toolkit to combat corruption linked to illegal processing, shipment and disposal of especially hazardous waste. In the light of the perceptions of the growing importance of environmental protection and sustainable economic processes, federal legislation should be designed to make the clauses that deal with these matters in regulations and private contracts, at all levels of the hierarchy described in this article, as 'complete' as possible.

Note

1. A textual analysis of individual waste disposal contracts was not possible due to these being sensitive, commercial-in-confidence documents, not in the public domain (SWS 2012a).

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